

## STUDIES ON THE NORTH AMERICAN APION: THE *APION NODICORNE* GROUP (Curculionidae)<sup>1</sup>

By D. G. KISSINGER<sup>2</sup>

Six North American species belong to the *Apion nodicorne* group, which ranges from southern Virginia to Brazil. *A. delta* Buchanan was reared from *Croton glandulosus* L. (Euphorbiaceae) by Bissell (1940). *A. buchanani*, sp. n., has been collected on corn, orange foliage, and cotton. Chief characters of the group are the post-scutellar spot of pubescence, yellow legs, beak strongly expanded laterally over the antennal insertion, and the narrow frons which is not wider than the dorsal tip of the beak.

Other characters are: body moderately robust, not gibbose in outline; generally with dense post-scutellar spot, without transverse pattern of scales; femora and tibiae pale reddish-yellow; beak curved, moderately slender, attenuate beyond antennal insertion (especially in female), strongly, acutely expanded laterally at antennal insertion; antennae inserted behind basal third of beak, stout, 2nd segment about as long as 3rd, anterior dorsal margin of antennal scrobes sharply oblique; prothorax acutely expanded laterally at base; middle coxae separated by a complete lamina; femora not club shaped; 3rd tarsal segment strongly bilobed, 1st segment of fore tarsi longer than wide; claws toothed; male legs simple.

The dorsal margin of the antennal scrobes of many species of *Apion* gradually slants downward from the anterior margin of the scrobe to beneath the eyes. The dorsal margin of the antennal scrobe of the *A. nodicorne* group does not gradually slant downward, but anteriorly at the expanded region of the insertion it slants ventrally at about a 45° angle to the long axis of the beak, then abruptly it slants upward to near the anterior margin of the eye (fig. 3-7). This forms a more or less prominent angulation over the antennal insertion. The anterior portion of the dorsal margin of the antennal scrobe is thus said to be sharply oblique.

### KEY TO NORTH AMERICAN SPECIES OF *A. NODICORNE* GROUP

1. Sides of prothorax converging in nearly a straight line from basal lateral expansion to apex (Figure 1); male beak in lateral view strongly curved in apical half (Figure 4); Tamaulipas ..... *saginans*, sp. n.

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- Sides of prothorax more or less constricted apically (Figure 2), not converging in a straight line; beak nearly straight in apical half ..... 2
2. Frons with a longitudinal median carina (Figure 9); female beak not more than three-fourths longer than prothorax (Figure 7) ..... 3
- Frons with at most a feeble median carina, generally concave medially (Figure 8); female beak more than twice as long as prothorax (Figure 6); Texas, Tamaulipas, San Luis Potosi ..... **buchanani**, sp. n.
3. Dorsal outline of head in lateral view abruptly sloped above posterior margin of eye (Figure 3) ..... 4
- Dorsal outline of head in lateral view not abruptly sloped above posterior margin of eye (Figure 7); median sulcus of prothorax extending from base to near apex; antennae black; Virginia to Mississippi ..... **delta** Buch
4. Robust, elytra length to width as 5:4, dorsal pubescence (with exception of post-scutellar spot) white, very fine, very sparse (Figure 2); male beak stout, in lateral view length of beak to greatest width in front of middle of beak as 11: 2.5, ventral surface of beak nearly straight in front of antennal insertion, dorsal surface noticeably curved from base to tip of beak (Figure 5); Yucatan ..... **expilator**, sp. n.
- More slender, elytra length to width as 10: 7, dorsal pubescence coarser, more scale-like, denser; male beak moderately slender, in lateral view length of beak to greatest width in front of middle of beak not greater than 11: 2.0, apical third of beak more or less cylindrical (Figure 3) ..... 5
5. Antennae black; median sulcus of prothorax extending to middle; sutural interval of elytra clothed with a confused row of scales about as coarse as those comprising the post-scutellar spot; Texas ..... **fumitarse** Fall
- Antennae yellow; median sulcus of prothorax extending from base to near apex; sutural interval of elytra (with exception of apical area) clothed with scales much finer than those comprising the post-scutellar spot; Mexico to Panama.....**nodicorne** Sharp

### **Apion saginans**, new species

(*Figures 1 and 4*)

Described from a single specimen, holotype, male, Tampico, MEXICO, December 21, E. A. Schwarz Collector, U. S. N. M. Cat. No. 63427.

Length: 2.08 mm.; width: 1.12 mm.

Robust. Black; femora, tibiae, tarsi, and antennal club pale reddish-yellow, remainder of antennae and last tarsal segment and claws darker. Pubescence conspicuous, bicolored on dorsal surface, on most of dorsal surface scales are fine, yellowish, and moderately sparse, scales coarser and white on basal ridge connecting intervals 2 and 3 and forming a dense white post-scutellar spot commencing on sutural interval at distance behind scutellum equal to twice the length of the scutellum and extending a little less than one-third length of the elytra, sutural interval wider under the spot, scales on prothorax and elytra becoming whiter and coarser laterally, vestitures of meso- and metathorax dense, white, squamiform. Beak of male as long as head and prothorax combined; one-half longer than prothorax, distinctly curving from antennal insertion to tip; in lateral view tapering from antennal insertion to tip, anterior dorsal margin of antennal scrobes sharply oblique; in lateral view strongly, acutely dilated at antennal insertion, there equal to width of beak immediately distad of eyes, one-half wider than beak at tip, attenuating from dilation to apical third which is parallel sided; pubescent to middle, in dorsal view finely, superficially punctured, in lateral view with a deep sulcus above antennal insertion continuing to apical third and its trough is distinctly punctured, each puncture bearing a scale, a row of deep punctures extends below this from anterior

portion of antennal scrobes to apical third, which is nearly impunctate. Antennae inserted at basal fourth of beak, at distance from eye twice as great as width of frons; first segment equals next two, second segment slightly longer than third, club  $0.20 \times 0.08$  mm. Eyes moderately prominent; frons narrower than dorsal tip of beak, with a longitudinal median carina flanked on each side by a row of 7 punctures bearing yellow scales; in lateral view dorsal margin of head abruptly declivitous above posterior margin of eyes. Prothorax at base one-third wider than long, middle narrower than base, apex 0.63 as wide as base; sides beyond moderate basal lateral expansion evenly converging to very feebly constricted apex; in profile moderately arcuate; punctation moderately deep, 0.02-0.03 mm. in diameter, interspaces less than diameter of punctures, convex, alutaceous; basal fovea deep, narrow, extending about one-half length of prothorax. Elytra at humeri one-third wider than prothorax at base, 2.75 times as long as prothorax, length to width as 11:9; intervals nearly flat, 2 and 4 one-half wider than striae, with one row of scales, 3 and 5 twice as wide as striae with 2 rows of scales, sutural interval wider at post-scutellar spot of pubescence; striae deep, moderately wide. Scutellum subquadrate,  $0.08 \times 0.08$  mm., with wide, median longitudinal impression. Front femur 3.65 times as long as wide. Claws with acute basal tooth.

Distinctive characters of this species are the robust form, the bi-colored dorsal pubescence, the very dense post-scutellar white spot of pubescence, the nearly conical prothorax, the strongly curved beak, and the alternately narrow and wider elytral intervals 2 through 5.

### ***Apion buchanani*, new species**

(*Figures 6 and 8*)

Length: 1.81 to 2.37 mm.; width: 0.85 to 1.12 mm.

Moderately robust. Black; antennae, femora, tibiae, and tarsi pale reddish yellow, claws darker. Pubescence on dorsal surface variable in color either white or with distinct yellowish tinge, conspicuous, fine, moderately dense; at base of intervals 2 and 3 and along sutural interval for one-fourth length of elytra distinctly squamiform; post-scutellar spot not well defined, commencing directly behind scutellum; scales on sutural interval at middle of elytra distinctly finer than those immediately behind scutellum. Beak of male shorter than head and prothorax, slightly more than two-fifths longer than prothorax, slightly curved; in lateral view stouter in basal third, narrowed somewhat to distal half which tapers slightly to the tip; in dorsal view moderately, acutely expanded at antennal insertion, there slightly wider than beak immediately distad of eyes, twice as wide as beak at tip, attenuating to tip; clothed with scales to apical sixth; dorsal surface with fine, shallow punctures; in lateral view sulcus extending to apical sixth, with a row of punctures below the sulcus extending from antennal insertion to apical sixth and bearing scales. Beak of female elongate, slender, two-sevenths longer than head and prothorax combined, more than twice as long as prothorax, moderately curved; compressed in apical third; in lateral view tapering slightly to the tip; in dorsal view somewhat expanded over antennal insertion, there not as wide as beak immediately in front of eyes, and two-fifths wider than beak at tip, tapering to distal third which is nearly parallel sided; noticeably pubescent in front of antennal insertion, with minute scales to near tip, punctures fine, sparse, somewhat elongate, in basal two-thirds arranged to

form several irregular, fine, discontinuous, shallow sulci in front of antennal insertion, with a vague sulcus above antennal insertion. Antennae of male inserted slightly distad of basal fourth, at distance from eyes 2.5 times as great as width of frons; of female at basal two-ninths of the beak at distance from eyes three times as great as width of frons; first segment equals next two, second segment is slightly longer than third, club  $0.21 \times 0.08$  mm. Eyes moderately prominent; frons in both sexes narrower than dorsal tip of beak; in lateral view dorsal margin of head is evenly convex from base of rostrum to posterior margin of eyes, not abruptly declivitous behind. Prothorax one-third wider at base than long, middle narrower than base, apex 0.59 as wide as base; sides beyond basal lateral expansion feebly converging to middle, then rounded to constricted apex; profile slightly arcuate; punctation moderately shallow, 0.02-0.03 mm. in diameter, interspaces less than diameter of punctures, alutaceous, narrow ones convex; basal fovea deep basally, narrow, extending about one-half length of prothorax. Elytra at humeri one-fourth wider than prothorax at base, 2.3 to 2.4 times as long as prothorax, length to width as 11: 8; intervals flat, one-half wider than striae, intervals 2 and 3 with two rows of scales, other intervals and 2nd and 3rd in apical fourth with one row of scales; striae deep, moderately coarse. Scutellum subquadrate,  $0.06 \times 0.06$  mm., convex, not depressed medially. Front femur 3.3 times as long as wide. Claws with acute basal tooth.

Holotype: male, Brownsville, Tex., 21 IV 1945, on corn foliage, Harrison and Fraser, U. S. N. M. Cat. No. 63425. Allotype, female, Brownsville, Tex., November, 1925, McMillan Collector (USNM).<sup>3</sup> Twenty-eight paratypes: Brownsville, Tex., (one on pepper) 2 (AMNH), 2 (BMNH), 2 (DGK), 10 (USNM); Brownsville, Tex., 19 XI 1911, on pasture, S. Tex. Garden, 1 (INHS); Southmost, Cameron Co., Tex., 13 IV 1950, 2 (UK); Cameron Co., Tex., 1 (UK); MEXICO: Matamoros, 25 I 1950, on orange foliage, 2 (USNM); Tampico, December, 18-21, E. A. Schwarz, 5 (USNM); San Luis Potosi: Valles, 21 V 1937, K. L. Maechler, 1 (CIS).

The long, subcylindrical, evenly curved beak of the female is very distinctive. The form of the beaks of the females of *A. delta* Buch., *A. fumitarse* Fall, and *A. nodicorne* Shp. is similar (figure 7) and quite different from *A. buchanani*. In addition the frons is flat medially and not carinate longitudinally as is the case with all the other North American members of this group.

It gives me great pleasure to name this species in honor of Dr. L. L. Buchanan who recognized the species as new and had it separated as distinct.

### ***Apion delta* Buchanan**

(Figure 7)

*Apion delta* Buchanan, 1922, Proc. Ent. Soc. Wash., 24: 83; Bissell, 1940 Jour. Econ. Ent., 33: 846.

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<sup>3</sup>See Kissinger (1957) for explanation of abbreviations denoting institutions housing material.

This species is more similar to *A. nodicorne* Sharp of Mexico and Central America than it is to *A. fumitarse* Fall or *A. buchamani*, sp. n., from Texas and Northeastern Mexico. The post-scutellar spot is well defined as in *A. nodicorne* Sharp. The chief differences are the black antennae and feebly sloping dorsal margin of the head above the posterior margin of the eye which are characteristic of *A. delta* in contrast to the yellow antennae and abruptly declivitous dorsal margin of the head above the eyes which are characteristic of *A. nodicorne*.

Bissell (1940) records rearing this species from *Croton glandulosus* L. (Euphorbiaceae).

Known distribution:

Type locality: Southern Pines, North Carolina (USNM).

Virginia: Petersboro (USNM). North Carolina: Charlotte, Brunswick Co. (BDV DGK); Greensboro (USNM); Raleigh (USNM). South Carolina: Burton (USNM). Holly Hill (USNM); Manning (USNM); Ridgeland (USNM). Georgia: Flowery Branch, Hall Co. (BDV DGK); Zebulon (USNM). Florida: 4 mi. E. Apopka (DGK). Alabama: Tuscaloosa (BDV DGK). Mississippi: Gulfport (USNM).

### ***Apion expilator*, new species**

(*Figures 2 and 5*)

Described from a single specimen, holotype, male Izamal, Yucatan, MEXICO, April, Townsend, U. S. N. M. Cat. No. 63426.

Length: 1.88 mm.; width: 1.00 mm.

Robust. Black; femora, tibiae, tarsi, and apical portion and club of antennae pale reddish yellow, basal portion of antennae and last tarsal segment and claws darker. Pubescence white, fine, sparse on dorsal surface, with a conspicuous post-scutellar spot of dense, squamiform vestiture commencing on sutural interval at distance from scutellum equal to length of scutellum and extending one-fifth length of elytra, sides of prothorax with sparse, coarse scales, sides of meso- and metathorax densely covered with coarse scales. Beak of male stout, shorter than head and prothorax combined, two-fifths longer than prothorax, dorsal margin rather strongly curved, ventral margin nearly straight; in lateral view tapering to tip, more strongly so in distal 3rd; in dorsal view strongly, acutely expanded at antennal insertion, there wider than beak immediately distad of eyes, twice as wide as beak at tip, attenuating to near tip, apical region more parallel sided, somewhat compressed in distal 3rd; clothed with scales to apical fifth, dorsal portion with fine but distinct punctures arranged in four rows, lateral portion with sulcus above antennal insertion present but not well defined, extending to about distal 3rd, a sulcus below this extending from antennal scrobe to apical fifth with punctures bearing scales. Antennae inserted slightly distad of basal fourth of beak, at distance from eyes twice as great as width of frons; first segment equals next two, second slightly longer than third, club  $0.21 \times 0.08$  mm. Eyes moderately prominent; frons narrower than dorsal tip of beak; in lateral view dorsal margin of head abruptly declivitous above posterior

margin of eye. Prothorax one-third wider at base than long, middle narrower than base, apex 0.64 as wide as base; sides beyond basal lateral expansion converging to slightly distad of middle, then rounding to distinctly constricted apex; profile moderately arcuate; punctation deep, 0.03 mm. in diameter, interspaces less than diameter of punctures, alutaceous, for most part about one-half as wide as punctures; basal fovea moderately deep, and narrow, extending a little more than one-third length of prothorax, not reaching middle of prothorax. Elytra at humeri one-third wider than prothorax at base, 2.4 times as long as prothorax, length to width as 9.5: 8; intervals flat, not twice as wide as striae, sutural interval noticeably wider at post-scutellar spot and 2nd interval noticeably narrower adjacent to this spot, intervals with one row of fine scales, interval 3 scales somewhat confused appearing in part as two rows; striae deep, moderately coarse. Scutellum subquadrate,  $0.06 \times 0.06$  mm., with broad, shallow, median, longitudinal depression. Front femur four times as long as broad. Claws with acute basal tooth.

Distinctive characters of this species are the robust form, the very dense post-scutellar spot of white pubescence, and the stout beak which is curved on the dorsal margin and nearly straight on the ventral margin.

### ***Apion fumitarse* Fall**

(*Figure 3*)

*Apion fumitarse* Fall, 1898, Tr. Am. Ent. Soc., 25: 162.

This species is close to *A. delta* Buchanan and *A. nodicorne* Sharp. From the former it differs by the abruptly sloped dorsal margin of the head above the posterior margin of the eye. From both it differs by having the scales on the sutural interval as coarse as those composing the post-scutellar spot.

E. L. Gilbert has collected this species on *Dalea multiflora*.

Known distribution:

Type locality: San Diego, Texas.

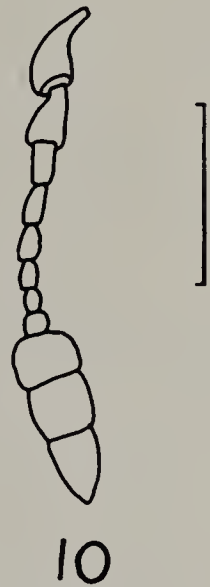
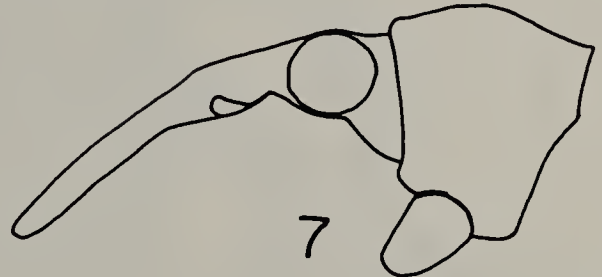
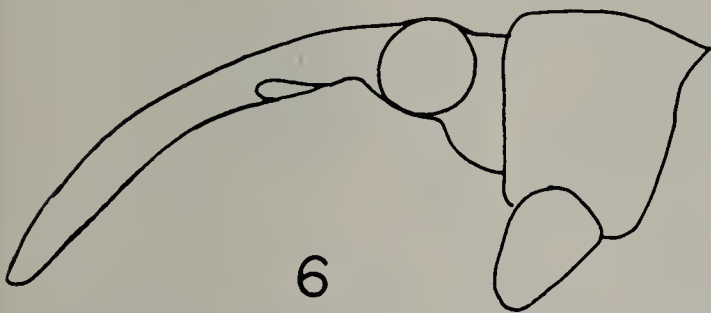
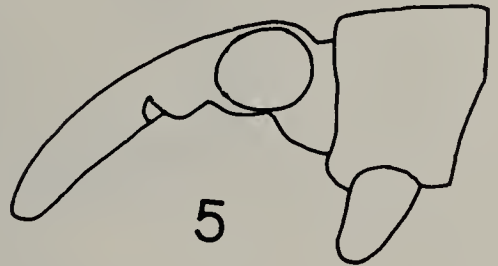
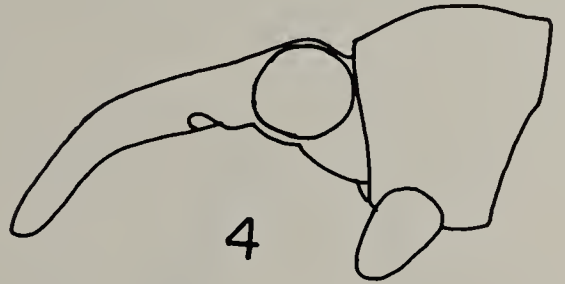
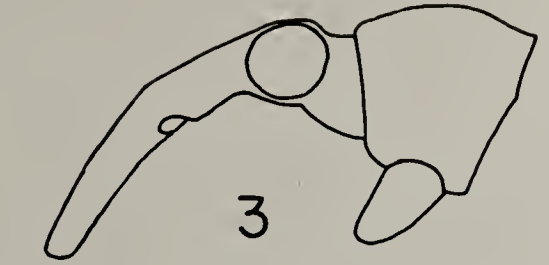
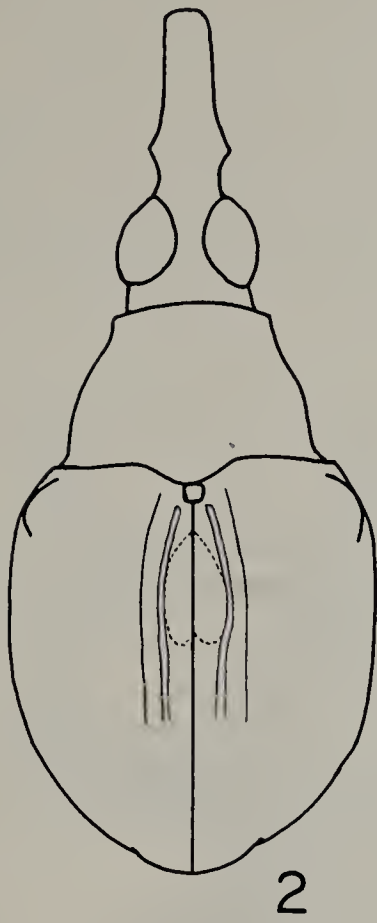
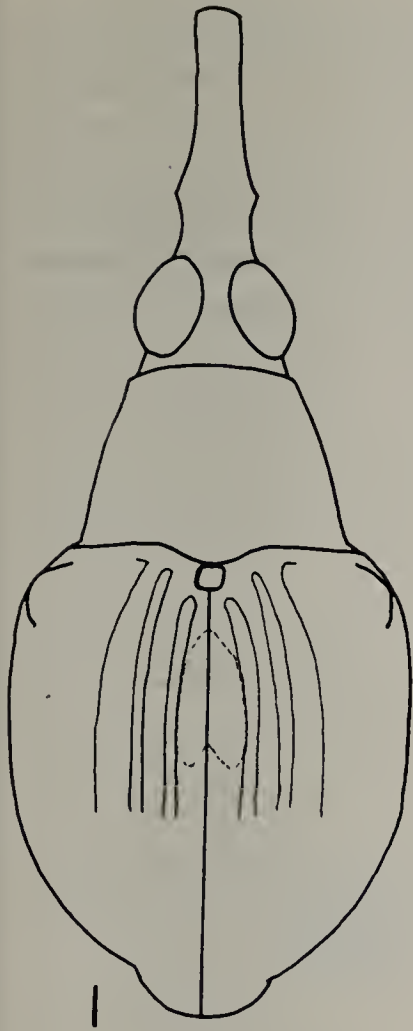
Texas: Aransas (CIS); Corpus Cristi (CU, ELS); Falfuria (UK); Mission (UK); Riviera (USNM); Sarita (UK).

### ***Apion nodicorne* Sharp**

(*Figures 9 and 10*)

*Apion nodicorne* Sharp, 1890, Biologia Centrali-Americana, Coleoptera, vol. 4, pt. 3, p. 78, pl. 3, fig. 18, 18a.

KNOWN DISTRIBUTION.—Described from MEXICO: Atoyac in Vera Cruz; GUATEMALA: San Geronimo; PANAMA: Bugaba (BMNH). MEXICO: Colima: Colima Vulcan (USNM). Guerrero: Acapulco (UK); 3 mi. S. Acajuizlotla (CAS). Nayarit: Tepic (CAS). Vera Cruz: Catemaco (DGK); Pasa del Toro (UM); Vera Cruz (UK). HONDURAS: Dept. Moraban Esc. pan. Zamorans, 2600' roadside (UM); Tegucigalpa (CAS, AMNH). COSTA RICA: Hiquito, San Mateo (USNM).



(See page 78 for captions)

FIGURE 1. Dorsal view of male *A. saginans*, sp. n. FIGURE 2. The same of male *A. expilator*, sp. n. FIGURE 3. Lateral view of head and prothorax of male *A. fumitarse* Fall. FIGURE 4. The same of male *A. saginans*, sp. n. FIGURE 5. The same of male *A. expilator*, sp. n. FIGURE 6. The same of female *A. buchanani*, sp. n. FIGURE 7. The same of the female *A. delta* Buchanan. FIGURE 8. Dorsal view of head of male *A. buchanani*, sp. n. FIGURE 9. The same of male *A. nodicorne* Sharp. FIGURE 10. Antennae of the female *A. nodicorne* Sharp. Note: Line equals 0.50 mm. in all figures except 8, 9, and 10 where it equals 0.25 mm.

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DISTRIBUTION RECORDS FOR *GRYPIDIUS LEECHI* (Curculionidae)

With most of the type series of *Grypidius leechi* Cawthra before me, it may be well to give in full the data which Miss Cawthra summarized as "U.S.A.: Colorado, Wyoming. CANADA: Alberta, 10 ♀." in her recent paper (Description of a new species of *Grypidius* Schönherr (Col.: Curculionidae) with a key to the genus. Proc. R. ent. Soc. Lond., Series B, 26 (7/8): 127-130, 3 text figs.).

The holotype is from Kenosha Pass, COLORADO, vii.10.38, J. W. Green collector. Kenosha Pass is in Park Co., on U.S. Highway 285, between Webster and Jefferson. Mr. Green tells me that his collecting was done at the top of the pass, near the highway, i.e. at about 10,000 feet elevation.

Other specimens are from COLORADO: Ute Cr., near Fort Garland, 30.vi.'44 (Rv. B. Rotger, C. R.); Longs Pk. Inn, 9,000 ft., vii.14.1926 (E. C. Van Dyke). WYOMING: Jackson Hole, Gd. Tetons, 6.23.38 (E. C. Van Dyke). ALBERTA: Banff, vi.15.18 (Van Dyke collection).

*G. leechi* is the species which has passed in our collections as *brunnirostris* (Fabricius), in part. It is separated from both *brunnirostris* and *equiseti* (Fabricius) by the fact that all the elytral interstices are flat.—HUGH B. LEECH, *California Academy of Sciences, San Francisco.*